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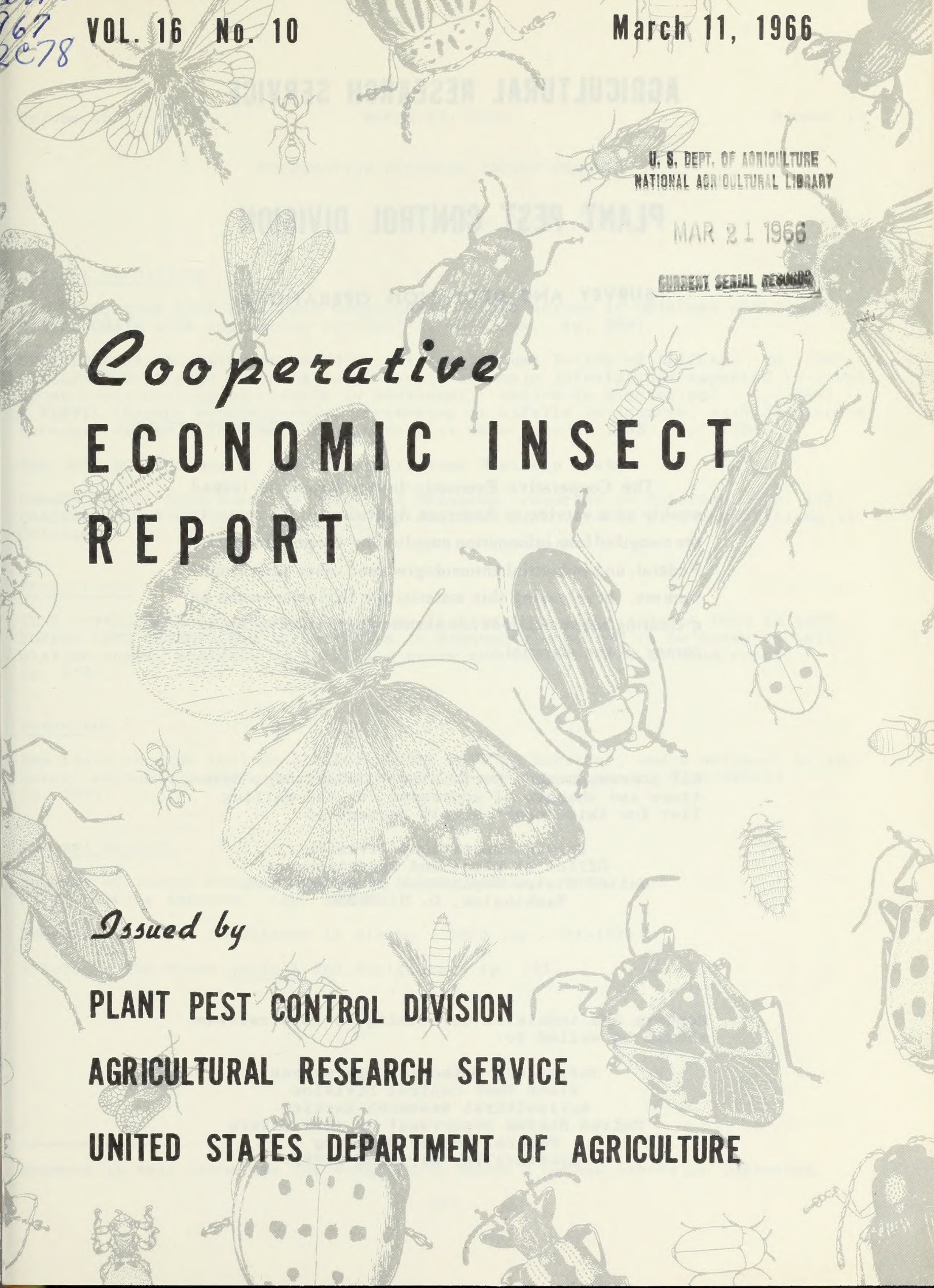

Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 16 March 11, 1966 Number 10

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG, CORN LEAF APHID and other GRAIN APHIDS active in Oklahoma and Texas. WINTER GRAIN MITE increasing on wheat in Oklahoma. (p. 169).

SPOTTED ALFALFA APHID increased on alfalfa in Yuma Valley of Arizona. (p. 169). ALFALFA WEEVIL eggs hatching in Missouri; economic infestations expected to develop on first cutting of alfalfa in southeast. Active in Mississippi. (p. 169). A WEEVIL (*Hypera brunneipennis*) increasing in alfalfa in Arizona, with 90 percent terminal damage. This more damage than at same time in 1965. (p. 170).

SAN JOSE SCALE damaging peach trees in some Southern States. (p. 170).

COMMON CATTLE GRUB heavy in cattle in Oklahoma, reported in Colorado. (p. 173). BLACK-LEGGED TICK (*Ixodes scapularis*) dominant tick on deer at check stations in Oklahoma. (p. 173).

Predictions

TENT CATERPILLAR damage expected to be lighter this year in Texas than in 1965. FOREST TENT CATERPILLAR infestations in Minnesota expected to be heavy on half million acres, moderate on 1 million acres and light on 3.3 million acres. (p. 172).

Detection

New State records include a FALSE SPIDER MITE in Maryland; and 5 moths, of no apparent economic importance, in Delaware. A new island record from Hawaii. (p. 175).

Special Reports

Summary of Insect Conditions in the United States - 1965
  Truck Crop Insects. (pp. 177-190).

Summary of Insect Conditions in Alaska - 1965. (pp. 191-192).

A Note on the Names *Adelges* and Adelginae. (p. 193).

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SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (Schizaphis graminum) - OKLAHOMA - Counts per linear foot 4-30 in wheat in Cotton and Tillman Counties; 20-80 in Fairview area, Major County, and 1-25 in Kingfisher, Garfield and Blaine Counties; continues heavy locally in Mayes County; ranged 5-30 per linear foot in Blaine County. (Feb. 26). Averaged 2 per linear foot in wheat checked in Noble County; light in Mayes County. (Okla. Coop. Sur.). TEXAS - Light on wheat near Terrell, Kaufman County; no economic damage reported. (Turney).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Increasing in small grains in areas of Maricopa and Pinal Counties. (Ariz. Coop. Sur.). OKLAHOMA - Present in most wheat checked; ranged up to 30 per linear foot but most counts less than 10 per linear foot. (Okla. Coop. Sur., Feb. 26). TEXAS - Very light on oats near Terrell, Kaufman County. (Turney).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Increased in Yuma Valley alfalfa. Damage continues light. (Ariz. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - OKLAHOMA - Dry cornstalks checked in Beckham County 12 percent infested with live larvae; 20 percent in Washita County. All stalks in both fields showed perforations. (Okla. Coop. Sur., Feb. 26).

SMALL GRAINS

GRAIN APHIDS - OKLAHOMA - Rhopalosiphum padi ranged 5-10 per linear foot in wheat checked in Garfield and Kingfisher Counties; 80-200 per linear foot in Blaine County. (Okla. Coop. Sur., Feb. 26). Averaged 25 per linear foot in Noble County wheat; Macrosiphum avenae ranged 10-15 per linear foot in wheat in this county. (Okla. Coop. Sur.). TEXAS - Rhopalosiphum fitchii light in oats near Terrell, Kaufman County; populations not yet economic. (Turney).

LEAFHOPPERS - FLORIDA - Very light on rye at Gainesville, Alachua County. Macrosteles fascifrons averaged 14 adults per 100 sweeps. Balclutha spp. next most abundant. (Mead).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Increasing in wheat in eastern Tillman County; up to 400 per linear foot in some areas. Ranged up to 30 per linear foot in Cotton County. (Okla. Coop. Sur., Feb. 26). TEXAS - Few observed near Terrell, Kaufman County. Recent, heavy rains apparently reduced populations. (Turney).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - MISSOURI - First-stage larvae averaged 2 per 100 sweeps in 2 of 4 Pemiscot County alfalfa fields, southeast. First report of season occurred March 2. Eggs just hatching; economic infestations expected to develop on first cutting alfalfa in southeast. Alfalfa just beginning to green. (Jones, Keaster). ARKANSAS - Oviposition studies continue in Mississippi County; eggs now average 721,644 per acre. Few larvae found; many eggs showed embryonic development. Hatching expected to increase as temperatures rise. (Ark. Ins. Sur.). MISSISSIPPI - Larvae averaged 84 per square foot in field of alfalfa in Pontotoc County; as many as 7 per bud found in some instances. Larvae averaged 21 per square foot in alfalfa checked in Oktibbeha County. (Dinkins et al.).

A WEEVIL (*Hypera brunniepennis*) - ARIZONA - Larvae increasing in alfalfa in Yuma and Maricopa Counties. Larvae as high as 1,100 per 100 sweeps in some fields on Yuma Mesa, with 90 percent terminal damage. (Ariz. Coop. Sur.).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - MISSISSIPPI - Two adults taken with vacuum sweeper in 200 linear feet of clover in Oktibbeha County. (Dinkins et al.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - ARIZONA - First and second-stage larval infestations observed in Yuma County. Occasionally light infestation near Buckeye, Maricopa County. (Ariz. Coop. Sur.). MISSOURI - Two small larvae swept from young alfalfa March 2; less than 1 per 100 sweeps. First report of season. (Jones, Keaster).

GREEN CLOVERWORM (*Plathypena scabra*) - FLORIDA - Most larval instars noted on blue lupine at Gainesville, Alachua County. (Mead).

PEA APHID (*Acyrthosiphon pisum*) - ARIZONA - Gradually increasing in alfalfa in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.). NEW MEXICO - Light in alfalfa in Dona Ana and Eddy Counties. (Mathews, Kloepfer). MISSOURI - Very small numbers present in Pemiscot County alfalfa. (Jones, Keaster). MISSISSIPPI - Total of 23 adults taken in 200 linear feet of clover with vacuum sweeper in Oktibbeha County. (Dinkins et al.).

SUGAR BEETS

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Light numbers appearing in sugar beet seed fields in Maricopa County. (Ariz. Coop. Sur.).

SAY STINK BUG (*Chlorochroa sayi*) - ARIZONA - Small numbers of nymphs present in most sugar beet seed fields in Maricopa County. (Ariz. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

SAN JOSE SCALE (*Aspidiotus perniciosus*) - OKLAHOMA - Heavy and damaging peach trees in Mayes County. (Okla. Coop. Sur.). TEXAS - Moderate and damaging peach trees near Wills Point, Van Zandt County. (Berry). ALABAMA - Light on numerous peach trees and orchards in central counties where poor control measures used last summer. Few orchards observed in Geneva County and other extreme southern areas practically free of this pest. (Bagby et al.).

WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) - ALABAMA - Light to moderate on several isolated peach trees in Lee County. (Barwood et al.).

GREEN PEACH APHID (*Myzus persicae*) - COLORADO - Survey indicates moderate to heavy egg deposition in Mesa County. No hatching observed. (Bulla).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - MISSISSIPPI - Larvae averaged 4 per tree in 10 of 20 trees inspected in Pontotoc County orchard. (Dinkins et al.).

TWO-SPOTTED SPIDER MITE (*Tetranychus urticae*) - CALIFORNIA - General on peach trees in large orchard in Herndon, Fresno County. Early for mite to be evident on deciduous fruit trees. (Cal. Coop. Rpt.).

CITRUS

CITRUS RED MITE (*Panonychus citri*) - CALIFORNIA - Light on citrus in Centerville and Sanger, Fresno County. Major pest of citrus in southern area; now more frequent in middle and northern areas. (Cal. Coop. Rpt.).

OTHER TROPICAL AND SUBTROPICAL FRUITS

A WEEVIL (*Brachyrhinus cribricollis*) - CALIFORNIA - Eggs, larvae and adults locally heavy in olive orchard in Ivanhoe, Tulare County. (Cal. Coop. Rpt.).

GENERAL VEGETABLES

GREEN PEACH APHID (*Myzus persicae*) - ARIZONA - Increasing populations required controls on lettuce in Yuma Valley. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Small larvae light in vegetables in Maricopa and Yuma Counties. (Ariz. Coop. Sur.).

THRIPS - NEW MEXICO - Continue light on onions in Dona Ana County. (N. Mex. Coop. Rpt.).

ORNAMENTALS

APHIDS - ALABAMA - *Aphis spiraecola* egg hatch extremely high on all spirea in central area. Stem mothers producing tremendous colonies of nymphs. Overwintered *Adalia bipunctata* quite noticeable; feeding and laying eggs. (McQueen). CALIFORNIA - *Eriosoma lanigerum* medium on pyracantha plants locally in San Rafael, Marin County. (Cal. Coop. Rpt.).

ARMORED SCALES - CALIFORNIA - *Parlatoria oleae* medium on ash and flowering pear nursery stock in Thermal, Riverside County. *Abgrallaspis cyanophylli* medium on *Faucaria tigrina* (tiger-jaw) nursery stock in Vista, San Diego County. (Cal. Coop. Rpt.). VIRGINIA - *Pseudaulacaspis pentagona* medium to heavy on Modesto ash and Japanese pagoda trees in Chesapeake area. (Pierce, Feb. 28). PENNSYLVANIA - *Diaspis echinocacti* very heavy on several cactus varieties in greenhouse in Altoona, Blair County. (Udine, Feb. 10).

A FALSE SPIDER MITE (*Pentamerismus taxi*) - MARYLAND - Adults collected August 4, 1965, from *Taxus* sp. at Cumberland, Allegany County. Collected by W. T. Garrett. Det. by E. W. Baker. This is a new State record. (U. Md., Ent. Dept.).

A SPIDER MITE (*Tetranychus marianae*) - CALIFORNIA - Medium on *Solanum* sp. in Olinda, Orange County; second location reported for county. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

BARK BEETLES (*Dendroctonus* spp.) - CALIFORNIA - *D. pseudotsugae* infesting Douglas-fir on Jackson State Forest, Mendocino County. Groups of trees in 0.5-acre area dead or dying.(D. M. Burns). *D. ponderosae* and *D. brevicomis* causing death of ponderosa pines in groups of 2-8 trees in Big X area, El Dorado National Forest. Many trees just starting to fade. (B. S. Bever). *D. brevicomis* and *D. valens* killing single trees and groups of 5 ponderosa pines in Prather Mill-Upper Lake area, Mendocino National Forest. (L. C. Simmens, USFS).

ELM LEAF BEETLE (*Galerucella xanthomelaena*) - COLORADO - Overwintering adults active on elm trees in Pueblo County. (Hantsbarger).

SILVER-SPOTTED TIGER MOTH (*Halisidota argentata*) - CALIFORNIA - Infesting single trees of Douglas-fir and white fir in Gilberts Canyon area, El Dorado National Forest. Numbers of reports increased over last 2 years. (Hill, Kneiffe, Lutigo, USFS). Active in the Happy Camp area on Klamath National Forest. (Alden, USFS).

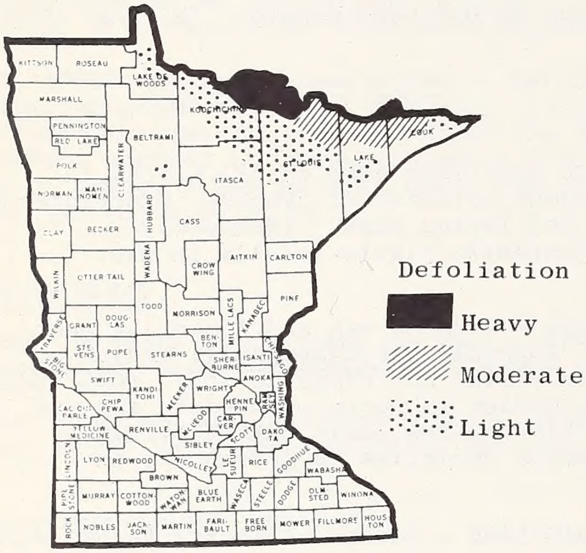
A TIGER MOTH (*Halisidota ingens*) - COLORADO - Larvae heavy on pine in Elbert County. (Hantsbarger).

CALIFORNIA OAKWORM (Phryganidia californica) - CALIFORNIA - Causing severe damage to native oaks in Pine Hills and North Peak area, San Diego County. About 150 acres completely defoliated; light damage in remainder of area. (Cal. Coop. Rpt.).

SPRING CANKERWORM (Paleacrita vernata) - MISSOURI - Adult males noted at lights in Pemiscot County March 2. (Jones, Keaster).

FOREST TENT CATERPILLAR (Malacosoma disstria) - MINNESOTA - Fall and winter egg band survey indicates infested area increased 41 percent over that of 1965. Infestations again in one block as in 1965, except for 2 small areas. Southern limits range from Warroad through Big Falls, Hibbing, Cook, Tower, Ely, Grand Marais to Pigeon River. Infestations in 1966 will be heavy on 0.5 million acres, moderate on 1 million acres and light on 3.3 million acres. Infested acreage totals 4.8 million compared with 3.4 million in 1965. (Minn. Ins. Rpt.). (See accompanying map).

Forest Tent Caterpillar Predicted Defoliation in Minnesota - 1966



TENT CATERPILLARS (Malacosoma spp.) - TEXAS - Survey for egg cases of M. disstria and M. tigris in Travis, Hayes, Comal, Bexar, Kendall, Blanco, Johnson, Burnet, Lampasas, Hamilton and Coryell Counties showed very light numbers compared with 1965. Several sites in main cities checked and several trees at 15-mile intervals along route inspected. Indicates much lighter damage expected this year. (Parker). ALABAMA - Light to medium numbers of M. americanum egg masses observed on wild cherry in central and southern areas. No hatch noted. (McQueen).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - CALIFORNIA - Locally heavy on pine and fir trees in Pine Grove, Amador County. (Cal. Coop. Rpt.).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - MARYLAND - Heavy on several red maple trees in Glenridge community, Prince Georges County. (U. Md., Ent. Dept.).

A CONIFER APHID (Cinara coloradensis) - CALIFORNIA - Locally heavy on Picea pungens in Manteca, San Joaquin County. (Cal. Coop. Rpt.).

A CECIDOMYIID MIDGE (Thecodiplosis cockerelli) - COLORADO - Widespread and heavy on pinyon pine at Fort Collins, Loveland, Boulder and Denver. Overall infestation 5 percent, but as high as 25 on some trees. (Thatcher).

MAN AND ANIMALS

MOSQUITOES - CALIFORNIA - Emergence of hibernating Anopheles spp. reduced during week. Spring emergence now about 90 percent over. Return of low daytime and nighttime temperatures could cause second emergence prior to egg laying. Fall and winter treatment of tree holes with persistent insecticides should control Aedes sierrensis sufficiently to eliminate irritation areas treated for 2 or more seasons. Gambusia affinis (a mosquito fish) holding ponds well stocked. (Cal. Coop. Rpt.). NEW MEXICO - Culiseta inornata larvae ranged 3-4 per dip in Valencia, Bernalillo and Dona Ana Counties. Aedes dorsalis and Aedes vexans adults found in large numbers under bridge in Las Cruces area, Dona Ana County; Culex tarsalis averaged 5 larvae per dip in drain ditch in Las Cruces. (N. M. Dept. of Pub. Health). FLORIDA - Additional rains and warm weather in Gainesville area resulted in 2 mosquito larval broods in woodland pool. At same time, large brood of first and second instars of several species noted; estimated hatching time approximately February 27. *Aedes infirmatus* and *Psorophora ferox* 2 most common species, followed by *Aedes vexans* and *Aedes atlanticus*. Pool lined primarily with oak and pine leaves. (Mead). MARYLAND - First-stage larvae of *Aedes canadensis* found in Montgomery, Anne Arundel and Prince Georges Counties, and of *Aedes cantator* in Anne Arundel County, all on March 1. (U. Md., Ent. Dept.).

COMMON CATTLE GRUB (*Hypoderma lineatum*) - OKLAHOMA - Heavy on cattle checked in Pushmataha and Cotton Counties week ending February 26. Averaged less than 5 per head on untreated yearling steers in Canadian County. (Okla. Coop. Sur.). COLORADO - Counts per head in untreated cattle averaged 12 in Baca County, and 17 in Weld County. (Hantsbarger).

CATTLE LICE - COLORADO - Heavy buildup noted in Weld County. (Hantsbarger). OKLAHOMA - Heavy on cattle checked in Pushmataha and Cotton Counties week ending February 26. Extremely heavy on yearling steers in Kay County, moderate on cattle in Roger Mills County March 4. (Okla. Coop. Sur.). ARKANSAS - Very light in herd of 150 cattle in Washington County, northwest. (Ark. Ins. Sur.). ALABAMA - Although somewhat lighter than usual on cattle this winter, now occurring in many herds in Marion County. (Price). NORTH CAROLINA - *Linognathus vituli*, *Solenopotes capillatus* and *Bovicola bovis* heavy on several calves examined in beef herd on pasture in Orange County. *L. vituli* present in greatest numbers. (Mount).

NORTHERN FOWL MITE (*Ornithonyssus sylviarum*) - ARKANSAS - Infestations variable in Washington and Benton Counties, northwest. Heavy where present, but in probably less than 5 percent of flocks. (Ark. Ins. Sur.). MISSISSIPPI - Infestation spotted and light on caged laying hens in Oktibbeha County; ranged 10-20 per bird. (Dinkins et al.).

SHEEP SCAB MITE (*Psoroptes ovis*) - CALIFORNIA - Four individual breeding herds of beef cattle in Merced County found infested; 2,000 cattle involved brought from out of State during 1965. All herds under "hold order" and receiving eradication treatments. Only known occurrence of pest in State. (Cal. Coop. Rpt.).

LONE STAR TICK (*Amblyomma americanum*) - OKLAHOMA - Averaged 6 per head on cows in Pushmataha County week ending February 26. About 60 encapsulated in skin of red fox in Delaware County; readily apparent from underside. (Okla. Coop. Rpt.).

TICKS - OKLAHOMA - Total of 1,494 specimens taken from deer at check stations in McCurtain, Atoka, Le Flore, Pushmataha, Latimer, Coal and Pittsburg Counties during November 1965, determined as follows: Of this total, 1,386 (92.8 percent) *Ixodes scapularis*, by far dominant species; 67 (4.5 percent) *Dermacentor albipictus*, with heaviest concentration at Naval Ammunition Depot in Pittsburg County where it represented 28.5 percent of ticks taken; and remaining 41 (2.7 percent) *Amblyomma americanum*, representing no more than 7.7 percent of total in any location. Numbers per head ranged from 20 (Heavener area of Le Flore County and northeast McCurtain County) to 1,000 (Farris area, Atoka County). *Ixodes scapularis* remains heavy on deer in Atoka County; averaged over 500 per head. *A. americanum* and *D. albipictus* also present; averaging 10 percent and 0.5 percent of population respectively. Unspecified ticks moderate on cattle in Roger Mills County. (Okla. Coop. Sur.).

A VESPID WASP (*Polistes fuscatus centralis*) - NEVADA - Overwintering females numerous in and around homes in Las Vegas, Clark County. (Barton).

HOUSEHOLDS AND STRUCTURES

CIGARETTE BEETLE (*Lasioderma serricorne*) - CALIFORNIA - Infestation found in silk floss of embroidered pictures in San Francisco home. Pictures purchased by homeowner in Japan approximately one year earlier. Infestations previously occurred in spices and other commodities in this household. Infestation in silk floss may have originated from previous infestation. (Morrill, Dept. of Navy).

A POWDER-POST BEETLE (*Trogoxylon prostomoides*) - CALIFORNIA - Heavy in residences in Aptos, Santa Cruz County. More instances of adult emergence reported this winter than normal. Probably due to cold weather which required continued heating over a long period. (Cal. Coop. Rpt.).

BLACK CARPENTER ANT (*Camponotus pennsylvanicus*) - ALABAMA - Winged males and females grouping outside of nesting area near Lee County home prior to swarming. Numerous and annoying in kitchen. (McQueen).

EASTERN SUBTERRANEAN TERMITE (*Reticulitermes flavipes*) - MARYLAND - Winged forms emerged inside home at Hyattsville, Prince Georges County. (U. Md., Ent. Dept.).

BOXELDER BUG (*Leptocoris trivittatus*) - VIRGINIA - Adults common in and around many homes in Fulvanna County (Watts); common in Pulaski and Middlesex Counties (Isakson, Rich, Edwards). DELAWARE - Causing considerable annoyance in northern New Castle County. (Burbutis).

A SPRINGTAIL (*Onychiurus fimetarius*) - CALIFORNIA - Locally heavy in soil and mulch around maple trees in Fresno, Fresno County. Annoying to homeowners by migrating onto lawns, driveways, swimming pools and into residences. (Cal. Coop. Rpt.).

STORED PRODUCTS

LESSER GRAIN BORER (*Rhyzopertha dominica*) - TEXAS - Heavy infestations damaging stored shelled and ear corn near Seguin, Guadalupe County. (New).

RICE WEEVIL (*Sitophilus oryzae*) - TEXAS - Light populations observed in stored corn near Seguin, Guadalupe County; few *Tribolium castaneum* also observed. Moderate numbers damaging shelled stored corn at same locality. (New).

INDIAN-MEAL MOTH (*Plodia interpunctella*) - CALIFORNIA - Larvae heavy on commercial packages of dehydrated meat dog food. Apparently sufficient cereal material to support large populations. (Cal. Coop. Rpt.).

BENEFICIAL INSECTS

DAMSEL BUGS (*Nabis* spp.) - OKALHOMA - Up to 1.5 per linear foot noted in wheat in Cotton and Tillman Counties. (Okla. Coop. Sur., Feb. 26).

FEDERAL-STATE PLANT PROTECTION PROGRAMS

A BOLL WEEVIL (*Anthonomus* sp.) - ARIZONA - Adults observed flying in eastern Yuma County February 29. (Ariz. Coop. Sur.).

A FRUIT FLY (*Anastrepha suspensa*) - FLORIDA - Status unchanged; larvae and adults common in Dade, Broward and Palm Beach Counties. Calamondins, guavas and loquats principal hosts February 21-28. (Fla. Coop. Sur.).

GRASSHOPPERS - OKLAHOMA - Survey at 3 stops in Beckham County and one in Harmon County; average of 0.6 egg pod per square foot. One stop in pastureland south of Elk City, Beckham County, showed 15 egg pods in 2 square feet. Most pods sound; bee fly larvae noted at stop in Beckham County. (Okla. Coop. Sur.).

INSECT DETECTION

A FALSE SPIDER MITE (*Pentamerismus taxi*) - MARYLAND - Adults collected August 4, 1965, from *Taxus* sp. at Cumberland, Allegany County. Collected by W. T. Garrett. Det. by E. W. Baker. This is a new State record. (U. Md., Ent. Dept.). (p. 171).

AN OLETHREUTID MOTH (*Pseudexentera spoliana*) - DELAWARE - Adult taken in sweep net in woods at Newark, New Castle County, April 12, 1964. Collected by D. F. Bray. Det. by D. R. Davis. Known host chestnut. This is new State record. (Burbutis). Widespread in eastern United States, but apparently of no economic importance. (ARS).

AN OLETHREUTID MOTH (*Grapholitha eclipsana*) - DELAWARE - Adult collected from grass and shrubs in sweep net at Newark, New Castle County, May 4, 1964. Collected by D. F. Bray. Det. by D. R. Davis. Known host grape. This is new State record. (Burbutis). Widespread in eastern United States, but of no apparent economic importance. (ARS).

AN OLETHREUTID MOTH (*Olethreutes coruscana*) - DELAWARE - Adult collected from grass and shrubs in sweep net at Newark, New Castle County, May 29, 1964. Collected by D. F. Bray. Det. by D. R. Davis. This is new State record. (Burbutis). Widespread in eastern United States, but of no apparent economic importance. (ARS).

A GELECHIID MOTH (*Gnorimoschema salinaris*) - DELAWARE - Adults reared from galls on goldenrod by D. F. Bray at Newark, New Castle County, September 4, 6 and 12, 1964. Det. by R. W. Hodges. This is new State record. (Burbutis). Of no economic importance as far as is known. (ARS).

A PLUME MOTH (*Oidaematophorus inquinatus*) - DELAWARE - Adults collected at porch light in Newark, New Castle County, May 17, 1964, by D. F. Bray. Det. by R. W. Hodges. Known hosts ragweed and cocklebur. This is new State record. (Burbutis). Of no economic importance as far as is known. (ARS).

AN ASTEIID FLY (*Bryania bipunctata*)recorded as new island record on Oahu, Hawaii. (Hardy). (p. 176).

CORRECTIONS

CEIR 16(3):37 and 16(8):125 - A STINK BUG (Thyanta accera) should read Thyanta accerra.

CEIR 16(8):117, 124, 125 - A PRODOXID MOTH (Tetegicula sp.) should read (Tegeticula sp.).

LIGHT TRAP COLLECTIONS

FLORIDA (Gainesville, 3/2; blacklight) - *Feltia subterranea* 1, *Pseudaletia unipuncta* 1.

GEORGIA (Tifton, 2/23-3/2; temp. 34-62°F.; precip. 2.65 in.; blacklight) - *Heliothis zea* 0, *H. virescens* 0, *Manduca quinquemaculata* 0, *M. sexta* 0.

SOUTH CAROLINA (Charleston, 2/28-3/6; temp. 34-69°F.; precip. 3.28 in.; blacklight) - *Pseudaletia unipuncta* 4, *Spodoptera frugiperda* 0, *Prodenia ornithogalli* 0, *Agrotis ipsilon* 0, *F. subterranea* 1, *Peridroma saucia* 0, *H. zea* 0, *H. virescens* 0, *M. sexta* 0, *M. quinquemaculata* 0, *Estigmene acrea* 0, *T. ni* 0.

TEXAS (Brownsville, 2/26-3/4; temp. 47-85°F.; precip. trace; 2 blacklight) - *Agrotis ipsilon* 19, *F. subterranea* 53, *H. zea* 5, *Peridroma saucia* 59, *Prodenia ornithogalli* 6, *Pseudaletia unipuncta* 54, *Trichoplusia ni* 3.

HAWAII INSECT REPORT

Cereal and Forage Insects - A GRASSHOPPER (Schistocerca vaga) - Total of 23 adults (13 females, 10 males) flushed from Desmanthus virgatus (slender-mimosa) and Pluchea indica (Indian pluchea) in 0.25-acre area on Sand Island, Oahu. This indicates fast population buildup from previous observations. (Gaddis).

Truck Crop Insects - A LEAF MINER FLY (Liriomyza sp.) medium on snap beans and light on Solanum nigrum (popolo), a wild host, in Hanapepe, Kauai. (Au). BEAN BUTTERFLY (Lampides boeticus) larvae light on Dolichos lablab (hyacinth-bean) in Ewa, Oahu; about 2 per 20 beans. (Hironaka). ONION THRIPS (Thrips tabaci) light and attacking Allium fistulosum (green onions) in truck farms in Hanapepe, Kauai; mostly nymphs. Variety of A. fistulosum (red stem onions) completely free from attack. (Au).

Insects Affecting Man and Animals - SOUTHERN HOUSE MOSQUITO (Culex pipiens quinquefasciatus) light throughout most of Oahu during week of February 14-21 as indicated by light trap counts by Mosquito Control Branch, State Department of Health. Waiahole and Honouliuli only areas with counts of more than 100 (177 and 129 respectively). Aedes vexans nocturnus light in most areas of Oahu same period. Averaged 19.9 per trap at 42 light trap stations. (Dept. of Health).

Miscellaneous Insects and Other Pests - AN ASTEIID FLY (Bryania bipunctata) previously recorded only from Laysan, Nihoa and Kure of leeward islands. Six specimens taken in light traps in Honolulu on December 1, 1963, July 20, 1964, August 17-20, 1964, and December 13, 1965, constitute first records from Oahu. (Hardy). A full grown BROWN GARDEN SNAIL (Helix aspersa) found in Nawiliwili, Kauai; sixth specimen collected during past 12 months in area. One specimen also intercepted on camellia plant from California in Honolulu. (Look). A PLATASPID BUG (Coptosoma xanthogramma) very heavy on Cajanus flavus (pigeon-pea) at Pacific Heights, Oahu. Thick clusters of adults and various nymphal instars on one mature plant. Some branches (one-eighth inch diameter) bore 200-300 individuals per foot. This constitutes new host record for this bug. (Higa). GIANT AFRICAN SNAIL (Achatina fulica) found on barge from Oahu in Lihue, Kauai, February 25. Specimen 3 inches in diameter. (Look). A LYCTID BEETLE (Lyctus sp.) heavy on bamboo used in large anthurium greenhouse in Lawai, Kauai. Outer layer of bamboo remained intact but inner portion reduced to powder. (Au).

Beneficial Insects - A HELIODINID MOTH (Schreckensteinia festaliella) actively feeding on foliage and terminals of Rubus sp. (blackberry) in Koekee, Kauai. Approximately 3,000 acres of blackberry found in area. (Au). An ARCTIID MOTH (Selca brunella) becoming established near Kipu, Kauai, on Melastoma malabathricum (Indian-rhododendron). Damage to leaves and twigs obvious. (Au).

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1965

(continued from page 166)

TRUCK CROP INSECTS

EGGPLANT, PEPPER, POTATO AND TOMATO INSECTS

Highlights:

Although troublesome as usual, LEPIDOPTEROUS larvae were not so severe on solanaceous crops throughout the Nation as in other years. Some exceptions of note were CLAY-BACKED CUTWORM in Ohio, where infestations were widespread, EUROPEAN CORN BORER on the Eastern Shore of Virginia and TOMATO PINWORM in California. COLORADO POTATO BEETLE was particularly abundant and damaging the entire season on the Delmarva Peninsula. FLEA BEETLES were damaging in home gardens, particularly, but some commercial plantings suffered. WIREWORMS are becoming more destructive in the Pacific Northwest. APHIDS were widespread and in some instances more so owing to the severe drought. POTATO PSYLLID required controls but it was not so serious in most Western States as in past years.

TOMATO FRUITWORM (Heliothis zea) was the most serious pest of tomatoes in ALABAMA. It was light on tomatoes in southwestern GEORGIA during the first half of the year. This noctuid caused rather heavy damage to some late tomatoes in VIRGINIA, and infestations were heavy in untreated sweet peppers in DELAWARE in September. Light populations occurred on tomatoes, peppers and other crops in NEW JERSEY. This was the most troublesome pest of tomatoes in MISSOURI; infestations varied over the State. In KANSAS, this species was generally light or not reported as causing damage except to tomatoes in the Wichita area. H. zea continued a major pest of tomatoes in ARKANSAS but was lighter than in 1964. This pest was general on commercial and home vegetables over TEXAS. Continuous controls were necessary in ARIZONA to maintain noneconomic populations on spring truck crops. Moderate infestations were found in early fall. Egg surveys on tomato leaves in UTAH forecast almost no injury in the northern area; insecticide applications were omitted because of the low forecast. This pest infested tomatoes in COLORADO. Moderate to high numbers occurred on tomatoes in Mesa, Montrose, Delta and Garfield Counties; controls were fair to good. Much of the reduced yield was due to labor shortage and many fields were picked once and a partial second time only in that part of Colorado. Infestations were slow in starting in CALIFORNIA but they persisted into winter. There was a significant reduction of winter pupae in WASHINGTON following below zero temperatures on December 17, 1964. The first adult of the season was recorded in the Yakima Valley June 3; adult flights in the fall were the largest since 1958 because of the warm spring and summer.

BLACK CUTWORM (Agrotis ipsilon) was apparently responsible for injury to tubers in commercial potatoes in North Kingstown, South Kingstown and Exeter, RHODE ISLAND. It caused more than the usual injury to potatoes throughout NEW JERSEY. Larvae were light in potato fields in late June in WISCONSIN. This pest contributed to losses on potatoes in northern COLORADO. In OHIO, CLAY-BACKED CUTWORM (A. gladiaria) destroyed 20 acres of tomatoes in Sandusky County; other infestations in that State were widespread.

CABBAGE LOOPER (Trichoplusia ni) infestations on potatoes were heavy in northwestern counties of NEVADA; larvae were heavy on potatoes in Lyon, Pershing and Washoe Counties from mid-May into August, with controls applied in most fields. Trichoplusia spp. caused considerable injury to commercial tomatoes in Madison County, NORTH CAROLINA. T. ni and Pseudoplusia includens were minor pests of tomatoes in ALABAMA. T. ni was perhaps worse than usual on potatoes, tomatoes and other crops at Homestead, FLORIDA, during the winter-spring season and very numerous on unsprayed potatoes at Hastings during the same period.

Other noctuids attacking solanaceous crops were reported. Moderate to heavy infestations of CUTWORMS damaged potatoes in central MAINE in late June and an occasional potato plant was attacked by Papaipema sp. in Aroostook County in mid-July; it caused very severe damage in one field. STALK BORER (P. nebris) was generally present and caused about the usual number of complaints in RHODE ISLAND; tomatoes and peppers were most frequently attacked. Cutworms were damaging to tomatoes and potatoes in ALABAMA. VARIEGATED CUTWORM (Peridroma saucia) damaged some greenhouse tomato plants in Wayne County, OHIO, during November. P. saucia ranged trace to moderate on potatoes in COLORADO. This pest damaged potatoes and other crops throughout much of WASHINGTON.

TOMATO HORNWORM (Manduca quinquemaculata) was very prevalent in many tomato-growing areas of CALIFORNIA, and moderate to high numbers infested tomatoes in COLORADO. Tomato hornworm and TOBACCO HORNWORM (M. sexta) were light throughout INDIANA, causing little, if any, economic damage. HORMWORMS were severe on bell peppers in FLORIDA during September and October at Bradenton.

EUROPEAN CORN BORER (Ostrinia nubilalis) was light to moderate on potatoes, peppers and tomatoes throughout NEW JERSEY. Infestations in late potatoes increased slightly in MARYLAND. After a 4-year period of low incidence in VIRGINIA, larvae caused considerable damage to potatoes on the Eastern Shore. They were found in fall potatoes in very large numbers, probably due to field corn maturing early. This pest was very light on pimiento peppers in northern sections of ALABAMA late in the season.

POTATO TUBERWORM (Phthorimaea operculella) larvae mined potato leaves in a large commercial planting in Slocum, RHODE ISLAND in late summer. This gelechiid was well distributed in foliage of fall potatoes on the Eastern Shore of VIRGINIA and it was also troublesome in stored potatoes in a few areas of the State. This pest was present in most potato-growing areas of CALIFORNIA. Another gelechiid, TOMATO PINWORM (Keiferia lycopersicella) infested tomatoes in Imperial, Yolo and Fresno Counties, with infestations the worst in 10 years in San Diego County.

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) was abundant and damaging by mid-May in Grant County, WASHINGTON. Numbers ranged trace to moderate in COLORADO, were generally low in NORTH DAKOTA and generally light to moderate in KANSAS. This pest damaged potatoes in OKLAHOMA from mid-April to late June. During the first half of the year, this chrysomelid was light to moderate on tomatoes and potatoes throughout GEORGIA. This was one of the important pests of potatoes in ALABAMA; normal infestations occurred. Colorado potato beetle continued as the number-one pest of potatoes on the Eastern Shore of VIRGINIA. Infestations were extremely heavy and 1-4 foliage applications of insecticide were necessary. Tomatoes were also severely damaged. Following cool weather in June, an unusually large second brood developed on Virginia's Eastern Shore and adults of that brood caused considerable damage to fall peppers and late tomatoes. Infestations on the Eastern Shore of MARYLAND were also generally heavy and caused considerable damage to unprotected potatoes and tomatoes early in the season. Damage to late tomatoes and eggplants was also above normal. Populations were generally high this past year on tomatoes and potatoes in several areas of DELAWARE. Light to moderate injury occurred on potatoes throughout NEW JERSEY. This pest caused less conspicuous injury to emerging plants in RHODE ISLAND than in 1964; commercial growers maintained control. THREE-LINED POTATO BEETLE (Lema trilineata) was present in Rhode Island but inconspicuous.

TOBACCO FLEA BEETLE (Epitrix hirtipennis) infested tomatoes in several CALIFORNIA counties. WESTERN POTATO FLEA BEETLE (E. subcrinita) was present in Malheur, Baker and Klamath Counties, OREGON, on potatoes but no severe damage occurred. TUBER FLEA BEETLE (E. tuberis), which in former years caused heavy damage to central Oregon's potatoes, has not been a problem there the past 2 years; however, some damage occurred in the Willamette Valley. Spotty infestations of STRIPED FLEA BEETLE (Phyllotreta striolata) caused varying degrees of damage to potatoes and tomatoes in the Big Horn Basin of WYOMING; the most heavily infested potato fields ranged 32-46 adults per 100 sweeps. Infestations were larger than those found in 1964. Very small numbers of P. striolata were found in the southeastern growing areas of Wyoming. Trace to moderate populations of E. tuberis were noted on potatoes in COLORADO. Damage by POTATO FLEA BEETLE (E. cucumeris) was generally spotty on potatoes in NORTH DAKOTA; isolated moderate to heavy infestations appeared in the northeast.

Potato flea beetle populations were heavy in home gardens in Temple, MAINE; heavy damage occurred on potatoes and tomatoes in Auburn; damage occurred in June in both instances. Moderate to heavy damage occurred in Vassalboro, Maine, home gardens and on tomatoes in home gardens in Cumberland County in mid-June. Moderate populations caused moderate to heavy damage in central Maine until mid-August. Various FLEA BEETLES attacked tomatoes and potatoes in VERMONT. E. cucumeris was general on potatoes and tomatoes in average numbers in RHODE ISLAND. Flea beetles caused light to moderate injury to potatoes throughout NEW JERSEY. E. cucumeris was quite abundant in southeastern PENNSYLVANIA in May. This species was fairly common on some potatoes in New Castle and Kent Counties of DELAWARE in June and early July but populations were generally lower than in 1964. Epitrix spp. were somewhat lighter than usual in MARYLAND on tomatoes, potatoes and other solanaceous crops. E. cucumeris was relatively light in VIRGINIA and caused little damage to potato tubers. ELONGATE FLEA BEETLE (Systena elongata) caused moderate damage to tomatoes in the Griffin area of GEORGIA. Several species of flea beetles were damaging to potatoes in ALABAMA.

PACIFIC COAST WIREWORM (Limonius canus) and SUGAR-BEET WIREWORM (L. californicus) damaged potatoes by early May in south central WASHINGTON; these are increasingly destructive in eastern areas. L. californicus was more abundant than usual on potatoes in Malheur County, OREGON. Cardiophorus sp. damaged potatoes in several CALIFORNIA locations. Limonius spp. damaged tomato plants slightly in Goshen County, WYOMING. Damage first appeared in mid-June; populations appeared smaller than those of 1964. WIREWORMS caused light to moderate injury to potatoes throughout NEW JERSEY and ALABAMA.

DARKLING BEETLES (Blapstinus spp. and Metoponium spp.) damaged tomatoes and peppers in several locations in CALIFORNIA; PEPPER WEEVIL (Anthonomus eugenii) occurred on peppers in Orange County. FALSE WIREWORMS damaged tomato plants slightly in Goshen County, WYOMING. POTATO STALK BORER (Trichobaris trinotata) was very severe in several fields of newly set tomato plants in Luzerne County, PENNSYLVANIA. BLISTER BEETLES (probably Epicauta spp.) were especially damaging to tomatoes and potatoes near Masardis, MAINE, in early July; moderate populations, with severe injury, occurred on potatoes in Surry area in mid-July. Moderate damage to potatoes occurred in Jonesboro and damage was noted in a few fields in central Aroostook County in mid-July.

GREEN PEACH APHID (Myzus persicae) and BUCKTHORN APHID (Aphis nasturtii) migrations to potatoes began June 12 in MAINE; by mid-June, POTATO APHID (Macrosiphum euphorbiae) predominated. FOXGLOVE APHID (Acyrthosiphon solani) appeared between June 25 and July 10; migration was completed by that time. Increase in numbers during that period was 3 times the 1964 level. The increase during July 17 to August 14 was less than average. First indications of mortality due to entomogenous fungi were noted July 15 followed by a sharp increase in mortality until August 17. Fungi continued to decimate aphid populations to about August 28. Aphis nasturtii and Macrosiphum euphorbiae began fall migrations by or before August 17 and 23, respectively.

Green peach aphid was very abundant on potatoes in MASSACHUSETTS for the second consecutive year; many growers experienced difficulty in control. Incidence of this aphid in NEW JERSEY was abnormally high owing to shortage of normal weed hosts because of the prolonged drought and subsequent migration of alates to irrigated crops during midsummer and late summer. Potatoes, tomatoes, peppers and other crops were damaged. Potato aphid was moderate on potatoes early in the season in New Jersey. By mid-May, many young pepper plants were infested with green peach aphid in Sussex County, DELAWARE; populations were high on several large potato fields in western Kent County during July. Green peach aphid was rather common on untreated peppers in Kent and Sussex Counties, Delaware, from mid-August through September. Potato aphid and green peach aphid injured many plantings of tomatoes and peppers over a wide area of MARYLAND. APHIDS attacked pimiento peppers in northern ALABAMA throughout the season but were less than normal on tomatoes and peppers. Green peach aphid became numerous on potatoes in FLORIDA. GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) continued as the most prominent insect pest of greenhouse tomatoes in OHIO.

Green peach aphid increased rapidly on potatoes in the Yakima Valley of WASHINGTON during May; heavy infestations plus a high incidence of leaf roll virus occurred on potatoes in the eastern area. Green peach aphid and potato aphid were present in COLORADO in trace to moderate numbers. Controls were fair to good.

POTATO PSYLLID (Paratrioza cockerelli) caused concern to potato growers in Maricopa and Pinal Counties, ARIZONA, when medium populations developed in February, and early March and April. Populations were less than in 1964 but continued a serious economic problem. This psyllid damaged eggplants in San Luis Obispo County, CALIFORNIA, and damaged potatoes in Kern County. Populations were generally low in NEVADA as they had been in 1964. Large numbers of eggs and adults were found in mid-May in Goshen County, WYOMING, on matrimony-vine. This was a very early occurrence compared with mid-June of most years; however, numbers found throughout the State were slightly smaller than those of 1964. Nearly all fields were treated at planting with systemic insecticides and this, along with timely applications of contact insecticides, contributed to the very slight damage from psyllid yellows. Trace to moderate numbers of this psyllid occurred in most of the potato-growing areas of COLORADO. Tomatoes were infested lightly. Low populations also occurred in northwestern NEBRASKA with little economic damage. Preventive chemical controls were applied.

POTATO LEAFHOPPER (Empoasca fabae) was heavy in central MAINE and damaged potatoes in mid-August. Moderate damage occurred throughout NEW JERSEY. On the Eastern Shore of MARYLAND and VIRGINIA, this leafhopper caused extensive damage to late potatoes. LEAFHOPPERS were notable pests of potatoes in ALABAMA. Seasonal levels of E. fabae were low in MICHIGAN and no major problems developed on potatoes. Although this species was numerous in a few alfalfa fields in WISCONSIN throughout the summer, numbers decreased on vegetable crops in mid-August. Populations built up to considerable numbers in untreated potato fields and hopperburn was noticeable late in the season. Numbers remained low throughout the season in NORTH DAKOTA. Trace numbers occurred on potatoes in COLORADO. In CALIFORNIA, several species of leafhoppers were damaging to potatoes, tomatoes and other crops.

FOUR-LINED PLANT BUG (Poecilocapsus lineatus) caused severe feeding damage in Aroostook County, MAINE, in mid-July. Damage occurred on margins of 2 fields of potatoes bordering woods; spotty damage occurred within fields. TARNISHED PLANT BUG (Lygus lineolaris) ranged up to 5 per sweep on potatoes in Pembina County, NORTH DAKOTA. Medium infestations of SAY STINK BUG (Chlorochroa sayi) caused wilting of potato stems in Eureka County, NEVADA, in July. SUCKFLY (Cyrtopeltis notatus) caused locally heavy damage to tomatoes in Presidio County, TEXAS. LEAF-FOOTED BUG (Leptoglossus phyllopus) and STINK BUGS were minor pests of tomatoes in ALABAMA.

VINEGAR FLIES (Drosophila spp.) were less troublesome than usual in both tomato fields and in canneries of NEW JERSEY. D. melanogaster was very abundant in INDIANA from late August until mid-September. Weather conditions were ideal for the buildup on tomatoes.

TOMATO RUSSET MITE (Aculus lycopersici) was a general pest of tomatoes in CALIFORNIA. TWO-SPOTTED SPIDER MITE (Tetranychus urticae) severely damaged potatoes and other crops in eastern WASHINGTON crop areas. Several species of SPIDER MITES damaged tomatoes in most areas of TEXAS. Tetranychus sp., probably urticae, was light to moderate throughout NEW JERSEY on tomatoes, eggplant and other crops.

GRAY GARDEN SLUG (Deroceras reticulatum) and other species damaged tomatoes in Clark County, WASHINGTON.

CRUCIFER INSECTS

Highlights:

CABBAGE LOOPER damaged crops in eastern and western Washington for the first time since 1958. Elsewhere, this and other LEPIDOPTEROUS larvae were troublesome on crucifers where controls were applied too late or natural controls were inadequate. ROOT MAGGOTS (Hylemya spp.) were particularly destructive to crucifers; several reports of resistance were noted.

CABBAGE LOOPER (Trichoplusia ni) damaged crops in both eastern and western localities in WASHINGTON for the first time since 1958. This pest was widespread and damaging to many crops in CALIFORNIA. Light to medium infestations occurred on cabbage and other crops during the spring in ARIZONA; parasites were helpful in preventing larger populations. Moderate damage occurred on fall crops in Arizona. This noctuid caused conspicious injury to several acres of cabbage in Salt Lake County, UTAH, during the summer. Larvae were numerous in COLORADO in all areas where cabbage was grown. It continued to cause considerable loss in KANSAS home gardens where controls are often applied too late. This was a pest of cole crops in ARKANSAS but it was lighter than in some years; it was active as late as mid-November in broccoli. Damage to cole crops in NORTH DAKOTA gardens ranged moderate to severe but damage appeared late in the season. Considerable parasitism of larvae was observed in Foster County, North Dakota. The first main flight of adults in MICHIGAN was extremely late in arriving. Blacklight trap data showed that the flight occurred the first week of September; catches remained relatively low that month. Larvae appeared September 7 in 3 Monroe County plantings of cabbage. Overall damage was relatively light.

Cabbage looper was heavy on truck crops in the spring in the Belle Glade area of FLORIDA where inadequate insecticide treatments were applied. This pest was probably worse than usual on cabbage and other crops at Homestead during the winter-spring season. T. ni was the most damaging pest of crucifers in ALABAMA; a related species, Pseudoplusia includens, was also destructive. Cabbage looper infestations were light to heavy on crucifers in GEORGIA during the first half of the year. Trichoplusia spp. were the usual, serious problems on commercial and home garden cabbage throughout NORTH CAROLINA; larvae averaged 1-2 per head in 15 treated commercial fields in Watauga County in mid-September. T. ni was a major pest of crucifers in VIRGINIA and MARYLAND in the summer and fall; nuclear polyhedrosis virus reduced one population peak in Virginia, but the hot, dry weather in the fall reduced virus spread and larvae continued to be a problem in both States well into the fall. This pest was unusually abundant in NEW JERSEY and difficult to control on crucifers. It was also one of the most difficult pests to control on cabbage and cauliflower in MASSACHUSETTS. Light to moderate numbers caused moderate damage to cabbage at Cape Elizabeth, MAINE, in late June.

ALFALFA LOOPER (Autographa californica) was unusually abundant and damaging to crucifer seed crops and other crops in many parts of WASHINGTON; however, the second brood did not damage broccoli as anticipated in the northwest. VARIEGATED CUTWORM (Peridroma saucia) damaged crucifer seed crops in northwestern Washington. P. saucia was widespread in the Willamette Valley of OREGON where it severely damaged cabbage and other crops.

IMPORTED CABBAGEWORM (Pieris rapae) caused severe damage to cabbage and related plants in northwestern NEW MEXICO. Larvae continued to cause considerable losses in home gardens in KANSAS where controls are often applied too late. Damage to cole crop gardens in NORTH DAKOTA was moderate to severe; considerable parasitism of larvae was noted in Foster County. OHIO vegetables were attacked. This was the second most serious pest of crucifers in ALABAMA. Light to heavy infestations occurred the first half of the year in GEORGIA. Larvae were a problem early in the season on most crucifers in MARYLAND, especially in home gardens. There was little change in damage in RHODE ISLAND. Light to moderate populations caused moderate damage on cabbage in Cape Elizabeth, MAINE, in late June.

DIAMONDBACK MOTH (Plutella maculipennis) larvae were heavy on a large planting of cabbage near Salisbury, MARYLAND in June; this was a major pest of spring vegetables in VIRGINIA. Larvae of this species, PICKLEWORM (Diaphania nitidalis) and unspecified WEBWORMS were damaging to crucifers in ALABAMA.

CABBAGE APHID (Brevicoryne brassicae) was lower than normal in northwest WASHINGTON, probably because frost killed most cruciferous hosts. This aphid was prevalent on cole crops all year in CALIFORNIA. POPLAR PETIOLE GALL APHID (Pemphigus populitransversus) damaged cabbage roots in the Rio Grande Valley and turnip roots in the gulf coast area of TEXAS. Although B. brassicae was present in small numbers on vegetable crops in scattered areas of WISCONSIN, it was apparently not economically important. GREEN PEACH APHID (Myzus persicae) was first noted on young cabbage plants in April and B. brassicae was common on young cabbage plants in several areas of DELAWARE during late April and May. Cabbage aphid was light to heavy in GEORGIA during the first half of the year. APHIDS, including B. brassicae, TURNIP APHID (Hyadaphis pseudobrassicae) and P. populitransversus were damaging pests of crucifers in ALABAMA. Myzus persicae became numerous on late cabbage in FLORIDA.

CABBAGE MAGGOT (Hylemya brassicae) caused light damage on radish and cabbage generally in Androscoggin and Sagadohoc Counties, MAINE, in late June. Damage by these maggots was unusually heavy in the Burlington area, VERMONT, and in one instance eliminated a crucifer planting. Cabbage maggot appeared in average abundance in Vermont; it was particularly destructive to turnips. Adults were about as active as in 1964 in MASSACHUSETTS; egg deposition was heavy in some areas of Hampden and Hampshire Counties. Infestations were severe in Chinese cabbage in late July. This pest caused considerable concern to growers of turnips, radishes and cabbage throughout central NEW JERSEY. It was very damaging on commercial cabbage in untreated fields in NORTH CAROLINA and on fields receiving a standard chlorinated hydrocarbon treatment in Watauga County in late June. Cabbage maggot was severe and difficult to control in PENNSYLVANIA on cole crops, radishes and turnips. Infested cabbages were noted in 7 OHIO counties in mid-June and again in late September. Insecticide resistance was present in some areas. This pest was less numerous in WISCONSIN than in 1964; preventive controls appeared adequate in most fields. A few untreated cabbage fields in southeastern counties and some in Outagamie County as well as many home gardens of Wisconsin had high populations. H. brassicae infested Brussels sprouts in Santa Cruz and San Mateo Counties, CALIFORNIA. This anthomyiid fly severely damaged radishes and turnips in southwestern WASHINGTON.

Several species of FLEA BEETLES, especially Phyllotreta cruciferae, were again abundant in all sections of MARYLAND where they caused considerable injury to cabbage, broccoli, turnip greens and collards. Flea beetles were major pests of spring crop vegetable greens. P. cruciferae was very numerous on mustard greens, turnip greens, kale, collards and cabbage during September. A LEAF BEETLE (Phaedon sp.) caused heavy damage to mustard at Gainesville, FLORIDA.

GARDEN SLUGS were abundant and caused moderate to severe damage to cabbage in southeastern NORTH DAKOTA.

ASPARAGUS, ONION AND GARLIC INSECTS

SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata) ranged light to moderate in southern areas of NORTH DAKOTA. ASPARAGUS BEETLE (C. asparagi) was numerous on asparagus plants and shoots in the Wathena area of KANSAS. This species was slightly above normal in most sections of MARYLAND in both commercial and home plantings of asparagus. It was abundant in southern counties of NEW JERSEY and caused moderate injury. Populations of both species were the heaviest observed in many years in RHODE ISLAND.

ONION MAGGOT (Hylemya antiqua) was less numerous than in 1964 in WISCONSIN; preventive control measures appeared adequate in most fields. Several severe infestations in onions were reported in southeastern NORTH DAKOTA. H. antiqua and SEED-CORN MAGGOT (H. platura) were light in all onion fields checked in Mesa, Montrose, Delta and Garfield Counties of COLORADO. Local infestations of H. antiqua developed in Siskiyou County, CALIFORNIA.

ONION THRIPS (Thrips tabaci) infestations were heavy on green onions in Clark County, NEVADA, in March and on dry onions in Lyon County in July. This thrips was prevalent as in most years in western COLORADO onion fields but one or two sprays during the season were adequate. This thrips was damaging in onion-growing areas of TEXAS. Heavy populations caused considerable damage to onions in northwestern ILLINOIS; controls were necessary. In MARYLAND, onion thrips was the cause of injury to many onion plantings in home gardens.

CUTWORMS were exceptionally heavy on a wide variety of crops including asparagus in VERMONT. CLAY-BACKED CUTWORM (Agrotis gladiaria) feeding at bases of asparagus plants caused 75 percent of the crop to curl and bend in northeastern PENNSYLVANIA. Cutworms damaged onions and other crops in several MICHIGAN Counties.

BROWN WHEAT MITE (Petrobia latens) was heavy on onions in Lyon County, NEVADA; controls were necessary in May. BULB MITE (Rhizoglyphus echinopus) damaged garlic and other crops in CALIFORNIA.

BEAN, PEA AND LEGUME INSECTS

Highlights:

MEXICAN BEAN BEETLE populations ranged normal to lighter than normal in most areas of the Nation. Other coleopterous pests were generally well-controlled. Outbreaks of NOCTUIDS did not materalize on legumes, largely due to the careful inspections of areas where outbreaks occurred in 1964. However, considerable losses were reported.

MEXICAN BEAN BEETLE (Epilachna varivestis) overwintered in tremendous numbers in ALABAMA and it appeared throughout the State in April; it was a major pest of beans and peas. Light to heavy infestations occurred on beans in GEORGIA during the first half of the year. This beetle was a considerable problem on both home garden and commercial beans in NORTH CAROLINA as usual. This pest was unusually light on the spring crop of beans in VIRGINIA; it was again about normal in MARYLAND where it caused conspicuous but generally spotty injury to pole, snap and lima beans in all sections. Home gardens were damaged most in Maryland. There was little change in populations in RHODE ISLAND. Relatively few adults survived the 1964-65 winter in MICHIGAN, a sharp contrast with 1963-64. As a result, overall feeding damage by adults and larvae was much less. Severe infestations were noted on snap and pole beans in Morrow County, OHIO, in mid-September.

Mexican bean beetle caused heavy damage to bean foliage in NEW MEXICO; it often killed plants in Torrance and Valencia Counties; lighter damage was noted in Bernalillo, San Juan, Sandoval and Rio Arriba Counties. Infestations in KANSAS were much lighter than in 1964 although areas of infestations have increased. Damage to home garden snap beans did not cause concern until August and September; little injury occurred before then in Kansas. Light populations were noted in field beans in northwest NEBRASKA. This was the major insect present in irrigated bean areas of eastern COLORADO; however, it caused slight damage. This beetle was light in Mesa and Delta Counties on pinto beans; an occasional moderate population was noted in the Montrose area of Colorado.

BEAN LEAF BEETLE (Cerotoma trifurcata) destroyed or caused severe injury to home garden beans in eastern KANSAS where controls were not used. Adults were common but not overly destructive on snap and lima beans in MARYLAND. This leaf beetle was unusually light on the spring crop of beans in VIRGINIA. Large numbers overwintered in ALABAMA; it became a major pest of beans and peas throughout the year. Light to heavy infestations occurred in GEORGIA; PALE-STRIPED FLEA BEETLE (Systena blanda) caused heavy damage to lima beans in the Griffin area of Georgia. COWPEA CURCULIO (Chalcodermus aeneus) was a serious pest of commercial peas in southeastern ALABAMA. FLEA BEETLES were moderate on beans in western COLORADO; these were of little importance in Mesa and Delta Counties on pinto beans.

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) severely damaged lentils and dry peas in Whitman County, WASHINGTON, in August; ALFALFA LOOPER (Autographa californica) was unusually abundant and damaging to peas and other crops in many parts of that State. General infestations of BEAN LEAF SKELETONIZER (Autoplusia egena) occurred on green beans in Orange County, CALIFORNIA. Because of widespread larval infestations of GREEN CLOVERWORM (Plathypena scabra) in beans in MICHIGAN during the 1964 season, a close check was maintained by using blacklight traps and field sweepings. The first general flight occurred July 9-11; peak flight occurred about 2 weeks later. Weather and other natural control agents kept larval numbers low; no field problems were encountered in Michigan during 1965. CUTWORMS caused moderate to heavy damage to beans in central MAINE in late June. Green cloverworm was light on snap beans in NEW JERSEY. Cutworms were present and damaging to beans and peas in ALABAMA. Pseudoplusia includens and to a lesser extent CABBAGE LOOPER (Trichoplusia ni) caused moderate to heavy damage to foliage on snap beans with moderate injury to pods in FLORIDA. Considerable economic loss was noted. T. ni was probably worse than usual on beans and other crops at Homestead during the winter-spring season.

SALT-MARSH CATERPILLAR (Estigmene acrea) damaged field beans in CALIFORNIA, primarily in the southern area. BEAN LEAF ROLLER (Urbanus proteus) was a pest of southern peas and pole beans at Dover, FLORIDA. In ALABAMA, LESSER CORNSTALK BORER (Elasmopalpus lignosellus) was a serious pest, especially to noncommercial garden peas in the southeast.

PEA APHID (Acyrthosiphon pisum) built up to very high populations in WISCONSIN early in the season on alfalfa. Natural controls caused a population collapse in late May and prevented further buildup on alfalfa and peas. Winged aphids began dispersing from alfalfa into peas by the second week of May; populations were low until the second week of July then increased rapidly in peas, necessitating controls in many fields. Considerable variation between fields was noted; counts ranged zero to 200 per sweep. A. pisum was numerous in a few Wisconsin pea fields until the end of harvest. This aphid was common on commercial peas in most areas of DELAWARE by late April; counts in untreated fields averaged 200 per 100 sweeps. BEAN APHID (Aphis fabae) was fairly common in several commercial fields of lima beans in Delaware during July. Pea aphid started migrating in early June in Walla Walla County, WASHINGTON; no serious infestations developed on peas. Aphis fabae infested beans in Butte and Orange Counties, CALIFORNIA.

WHITEFLIES were heavy on beans in Torrance County, NEW MEXICO, and a problem on beans in home gardens in the Las Cruces area, Dona Ana County. GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) infested beans in a few CALIFORNIA locations.

LEAFHOPPERS were unusually light on the spring crop of beans in VIRGINIA. POTATO LEAFHOPPER (*Empoasca fabae*) ranged moderate to heavy on snap and lima beans in MARYLAND. High populations of this leafhopper on lima beans appeared to be associated with lowered yields in DELAWARE. *E. fabae* caused moderate injury to lima beans in NEW JERSEY. This leafhopper damaged beans occasionally in VERMONT. Lima bean fields in WISCONSIN with high numbers were treated when yellowing of alfalfa was noted.

BEAN THRIPS (*Caliothrips fasciatus*) infested beans in Santa Barbara and Sutter Counties, CALIFORNIA. Moderate numbers of unspecified THRIPS were noted on beans in western COLORADO. A heavy population of thrips killed young lima bean seedlings following onion harvest in NEW JERSEY. Thrips were heavy in the flowers of beans and peas in several areas of GEORGIA the first half of the season.

SEED-CORN MAGGOT (*Hylemya platura*) destroyed 60 percent of dry beans in Ferrisburg, VERMONT. It damaged bean seedlings by early May in Franklin County, WASHINGTON.

SPIDER MITES (*Tetranychus* spp.) were light to moderate on lima beans in NEW JERSEY. These became serious in midsummer in MARYLAND in lima bean fields over the State. Unspecified spider mites developed heavy populations on early beans in VIRGINIA in some instances. Spider mites were light on beans in western COLORADO; MITES were of little economic importance on pinto beans. TWO-SPOTTED SPIDER MITE (*T. urticae*) severely damaged beans and other crops throughout eastern WASHINGTON crop areas.

GARDEN SYMPHYLAN (*Scutigerella immaculata*) damaged beans in some CALIFORNIA locations.

BEET, SUGAR BEET AND SPINACH INSECTS

Highlights:

The heaviest population of SPINACH LEAF MINER ever recorded in Washington developed on sugar beets in mid-May; a second brood was abundant in June. An EPHYDRID FLY (*Psilopa leucostoma*) is now recorded as a pest of sugar beets throughout the Pacific Northwest. Various NOCTUIDS were troublesome on beets in the Nation but other Lepidoptera appeared to cause less concern.

SUGAR-BEET ROOT MAGGOT (*Tetanops myopaeformis*) was relatively light to moderate on sugar beets in COLORADO; it caused some loss to that crop in the northeastern area. Populations of this pest were slightly larger than in 1964 in WYOMING. Damage was first noted on sugar beets in the Big Horn Basin on June 23. In fields infested with this otitid fly, 4 to 8 plants in 100 showed feeding damage. Considerable damage was observed in NORTH DAKOTA in some eastern areas.

SPINACH LEAF MINER (*Pegomya hyoscyami*) eggs were abundant on sugar beets by early May in Yakima County, WASHINGTON. The heaviest population ever recorded developed by mid-May. A second brood was abundant in Washington by mid-June. Infestations occurred in OREGON in June. This anthomyiid fly was again the cause of concern to sugar beet growers in WYOMING. In the northern area, 22 percent of the beet plants were infested and in the southeast 28 percent were infested. These infestations were slightly lower than those found in 1964. Spinach leaf miner contamination was responsible for the dumping of many tons of State prison canned spinach grown in Utah and Salt Lake Counties of UTAH. This was also a serious pest of sugar beet foliage in parts of Utah during the season. Spinach leaf miner attacked vegetables in OHIO. This maggot is very common in RHODE

ISLAND wherever beets are grown.

An EPHYDRID FLY (Psilopa leucostoma), first recorded as a leaf miner on sugar beets at Walla Walla, WASHINGTON, in 1962, now attacks this crop in all major production areas of the Pacific Northwest. Ovipositing on sugar beets began in late May in Yakima County.

ZEBRA CATERPILLAR (Ceramica picta), along with VARIEGATED CUTWORM (Peridroma saucia), defoliated sugar beets in eastern WASHINGTON areas in September and October. Late stripping of foliage threatened reduction of sugar content of beets. ALFALFA LOOPER (Autographa californica) was unusually abundant and damaging to sugar beets and other crops in many parts of Washington. Variegated cutworm was widespread in the Willamette Valley of OREGON and it severely damaged new plantings of beets and other crops. BEET ARMYWORM (Spodoptera exigua) was widespread on beets and truck crops in CALIFORNIA. Elsewhere in that State ROUGH-SKINNED CUTWORM (Proxenus mindara) infested sugar beets in a few locations. Several species of CUTWORMS required controls on sugar beets in Delta County, COLORADO; cutworms were relatively light on sugar beets in other areas of the State. Alfalfa looper caused moderate to heavy damage on small sugar beet plants in Washakie County, WYOMING; infested fields averaged 2-3 larvae per plant with many fields requiring controls. BLACK CUTWORM (Agrotis ipsilon) damaged sugar beets in north central OHIO.

BEET WEBWORM (Loxostege sticticalis) was of no major consequence to sugar beet growers in WYOMING; a spotty infestation occurred near Huntley in mid-August, much later than June 25 occurrence in 1964. Most heavily infested fields in Wyoming ranged 8-15 larvae per plant. Beet webworm contributed to losses in southeastern COLORADO. Second-generation larvae of Loxostege spp. damaged some sugar beet fields in NEBRASKA during August; controls were necessary. FALSE CELERY LEAF TIER (Udea profundalis) infested beets in CALIFORNIA. A LEAF ROLLER MOTH (Ptycholoma peritana) was a pest of sugar beets in a few California locations.

Spotty infestations of STRIPED FLEA BEETLE (Phyllotreta striolata) caused varying degrees of damage to sugar beets and other crops in the Big Horn Basin of WYOMING. Infestations were larger than those of 1964; most heavily infested sugar beet fields averaged 32 to 46 adults per 100 sweeps. Very few numbers were found in the southeastern growing area. The first specimens were taken in the Big Horn Basin on June 23. FLEA BEETLE infestations on seedling sugar beets ranged medium to heavy for the third consecutive year in Pershing County, NEVADA. However, damage was low owing to insecticide treatments in late May and early June. Populations were up in Churchill County during the same period; some fields were treated and a few fields were totally destroyed. Late planted sugar beets required control measures in Washoe County in late June. Flea beetles occurred on sugar beets in COLORADO but not in large numbers. Various species damaged spinach and other crops in VIRGINIA.

PACIFIC COAST WIREWORM (Limonius canus) and SUGAR-BEET WIREWORM (L. californicus) damaged beets by early May in south central WASHINGTON. These are increasingly destructive in eastern Washington. Limonius spp. caused very light damage on sugar beets in Washakie County, WYOMING, in mid-June; populations were lighter than in 1964. SEED-CORN BEETLE (Agonoderus lecontei) was relatively light on sugar beets in COLORADO; it caused some losses to that crop in northeastern areas. STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) damaged sugar beets in the Yakima Valley of WASHINGTON.

LEAFHOPPERS damaged sugar beets and other crops in CALIFORNIA. GREEN PEACH APHID (Myzus persicae) increased rapidly on sugar beets in the Yakima Valley of WASHINGTON during May. This aphid was relatively light on sugar beets in COLORADO.

TWO-SPOTTED SPIDER MITE (Tetranychus urticae) severely damaged sugar beets and other crops throughout western WASHINGTON. An ACARID MITE (Tyrophagus dimidiatus) was present on spinach in Orange and Yolo Counties, CALIFORNIA.

CUCURBIT INSECTS

STRIPED CUCUMBER BEETLE (Acalymma vittata) caused light damage to cucumbers and squash in Androscoggin and Sagadohoc Counties, MAINE, in early June. This beetle was common wherever cucurbits are grown in RHODE ISLAND. Adults were fairly common and caused noticeable feeding injury to cucurbits during the first half of June in Kent and Sussex Counties, DELAWARE, and on summer squash in mid-July. Adults ranged light to heavy which is about normal on the Eastern Shore of MARYLAND. High populations attacked cucurbits, especially commercial cucumbers, in the northern part of ALABAMA. The first symptoms of bacterial wilt, indicative of earlier attack by this beetle, were reported in Berrien County, MICHIGAN, on June 30. This pest was heavy on cucumbers and other vine crops from late May until late September in OKLAHOMA.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata undecimpunctata) was found in very low numbers in early summer in the Willamette Valley of OREGON due to a cold, wet spring that apparently reduced the overwintering female population. Diabrotica spp. occurred in a few CALIFORNIA locations on cucurbits. SPOTTED CUCUMBER BEETLE (D. undecimpunctata howardi) was heavy on cucumbers and other vine crops in OKLAHOMA from late May to late September. Normal damaging populations of this subspecies occurred on cucurbits in ALABAMA. Diabrotica spp. caused light injury to cucurbits in NEW JERSEY during the season. POTATO FLEA BEETLE (Epitrix cucumeris) was heavy on home gardens in MAINE; it caused heavy damage to cucumbers and other crops in early June in Auburn. SQUASH BEETLE (Epilachna borealis) was present in normal abundance locally in Washington County, RHODE ISLAND; apparently this pest is not widely distributed in the State.

MELONWORM (Diaphania hyalinata) occurred on cucurbits in ALABAMA in normal damaging numbers. WEBWORMS (Loxostege spp.) damaged commercial cucumber seedlings in Jackson County, OKLAHOMA, in mid-August. Heavy, local populations of SQUASH VINE BORER (Melittia cucurbitae) damaged squash in San Jacinto County, TEXAS. This aegeriid attacked vegetables in OHIO. Normal, damaging populations occurred on cucurbits in ALABAMA.

SQUASH BUG (Anasa tristis) caused severe damage to squash in Riley County, KANSAS, during July. This bug became active in mid-May in OKLAHOMA with egg laying noted in late May; moderate to heavy infestations were present from early June to mid-August. Activity continued through early October. This coreid was a widespread problem to watermelon and squash producers over TEXAS; however, it was generally lighter than in 1964. This pest was locally damaging to squash in San Joaquin County, CALIFORNIA. Normal infestations occurred on cucurbits in ALABAMA.

MELON APHID (Aphis gossypii) developed large populations in late summer in RHODE ISLAND. Although present in small numbers on vegetable crops in WISCONSIN, this aphid was apparently not economically important in that State. This pest damaged watermelons in Hidalgo County, TEXAS. Medium to heavy populations were present in ARIZONA on melons and vegetables; it reached a peak during April. Populations developed on a few crops in CALIFORNIA. WHITEFLIES were severe on honeydew melons locally in Fresno County, California. Whiteflies were also a problem in home gardens in the Las Cruces area of NEW MEXICO.

In MARYLAND, THRIPS caused conspicuous foliage injury to cucumbers and squash at numerous locations on the Eastern Shore during midsummer, and SPIDER MITES (Tetranychus spp.) heavily injured several watermelon plantings in Wicomico County.

CARROT AND CELERY INSECTS

CARROT WEEVIL (*Listronotus oregonensis*) was locally heavy in carrot fields in the Rio Grande Valley of TEXAS but it was apparently less widespread than in 1963 and 1964. This weevil attacked vegetables in OHIO. It was a pest in carrots in home gardens in southeastern WISCONSIN but it apparently caused little damage in a few commercial plantings in that area. A DARKLING BEETLE (*Eleodes suturalis*) was a problem locally in carrots in Riverside County, CALIFORNIA.

VARIEGATED CUTWORM (*Peridroma saucia*) was widespread in the Willamette Valley of OREGON where it severely damaged new plantings of carrots and other crops. BULB MITE (*Rhizoglyphus echinopus*) damaged celery and other crops in CALIFORNIA. A SPIDER MITE (*Tetranychus* sp., probably *urticae*) was light to moderate on carrots and other crops in NEW JERSEY.

SWEETPOTATO INSECTS

Progress in the SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) program in the South during 1965 has been good. The SOUTH CAROLINA quarantine prohibits planting of sweetpotatoes within areas of known infestations. Surveys for wild hosts and volunteer sweetpotato plants within the nonplanting areas of the Coastal Plain revealed no new infestations. Host plants were destroyed when found and through this effort the weevil population was reduced to a bare survival level. Sweetpotato growers in GEORGIA treat all seedbeds, fields, and storage areas; 37 properties were found infested in Georgia. The State of FLORIDA is generally infested and commercial production of sweetpotatoes is minor. The primary interest is in reducing the danger of spread from heavy infestations to bordering States. Progress in ALABAMA was good; 8 properties were released from regulation and 108 properties were found infested. Additional infestations were found on 121 properties in MISSISSIPPI all in counties known to have infestations. Sweetpotatoes are one of the important cash crops in LOUISIANA and the successful production of commercial sweetpotatoes in most sections is dependent on the control of this pest. Surveys in 34 parishes revealed 468 infested properties; 121 properties were released from regulation in Louisiana. Surveys in TEXAS revealed 178 infested properties.

GOLDEN TORTOISE BEETLE (*Metriona bicolor*) caused conspicuous foliage injury in many sweetpotato fields in Wicomico County, MARYLAND, during June; adults of SWEETPOTATO FLEA BEETLE (*Chaetocnema confinis*) were heavy on newly set plants during May and June and again in late season just before harvest. Larval injury was below normal in Maryland. This flea beetle was heavy on the Eastern Shore of VIRGINIA in May; most sweetpotato growers treated for this pest. Several species of chrysomelids attacked sweetpotatoes in ALABAMA; MOTTLED TORTOISE BEETLE (*Deloyala guttata*), golden tortoise beetle and *Agroiconota bivittata* were normal.

SOUTHERN POTATO WIREWORM (*Conoderus falli*) and TOBACCO WIREWORM (*C. vespertinus*) injury to sweetpotatoes in NORTH CAROLINA was about the same for the past 3 years; damage was commonly present but not generally sufficient to lower grade of the sweetpotatoes. In CALIFORNIA, *Cardiophorus* sp. damaged sweetpotatoes in several locations.

STRAWBERRY INSECTS

STRAWBERRY WEEVIL (*Anthonomus signatus*) was moderate in Waterville, MAINE, by

May 26 and moderate with moderate damage in Monmouth June 3. Numerous reports were received from all areas of the State during the first week of June. Damage ranged light to heavy in Maine. STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) caused serious injury to some strawberry plantings in eastern MASSACHUSETTS early in the season. Strawberry weevil adults caused considerable amount of bud injury in several fields in Anne Arundel and Wicomico Counties, MARYLAND. STRAWBERRY CROWN BORER (Tyloderma fragariae) was heavy and damaging to strawberries in eastern NEBRASKA. Brachyrhinus spp. damaged strawberries in southwestern WASHINGTON and Nemocestes incomptus damaged strawberries in Pierce County. Sciopithes obscurus emerged in late June in OREGON and it was more numerous than usual in strawberry fields of Linn, Marion, Yamhill and Clackamas Counties.

STRAWBERRY LEAF ROLLER (Ancylis comptana fragariae) infestations remained light in northeastern KANSAS but continued moderate to heavy in the Wichita area. This olethreutid damaged strawberry fruit in MISSOURI but it was of little consequence. It was also a pest of minor importance in OHIO. OMNIVOROUS LEAF TIER (Cnephasia longana) developed moderate to heavy populations on strawberries throughout western WASHINGTON by mid-June. Another LEAF ROLLER MOTH (Ptycholoma peritana) was a pest of strawberries in a few CALIFORNIA locations. CUTWORMS were very prevalent on ripening strawberries statewide in MASSACHUSETTS even where controls were used.

STRAWBERRY APHID (Chaetosiphon fragaefolii) was unusually abundant in WASHINGTON; it averaged 0.5 per strawberry leaf in mid-April in Clark County. Populations built up in Marion County, OREGON, strawberry field in early May. This aphid infested strawberries in Orange and Fresno Counties, CALIFORNIA. Pentatrichopus spp. were generally light on strawberries in all sections of MARYLAND. TARNISHED PLANT BUG (Lygus lineolaris) was exceptionally heavy on strawberries in VERMONT.

FLOWER THRIPS (Frankliniella tritici) damage was very high on strawberries in ILLINOIS; this buildup was probably aided by dry weather during harvest. A survey of 20 commercial strawberry fields revealed that 27 percent of the fruit had some damage although this damage was very light on most berries.

GARDEN SPRINGTAIL (Bourletiella hortensis) appeared in great numbers in commercial strawberry plantings in Foster, RHODE ISLAND, in mid-May.

SPIDER MITES (Tetranychus spp.) were again very troublesome on numerous strawberry plantings in Harford, Prince Georges and Wicomico Counties, MARYLAND. CYCLAMEN MITE (Steneotarsonemus pallidus) was serious on strawberry plants in northern areas of MINNESOTA. As in past years, STRAWBERRY SPIDER MITE (T. atlanticus) was a definite problem on strawberries in MISSOURI. MITES were the principal pests of strawberries in ARKANSAS. Tetranychus spp. were severe on strawberries and other truck crops in CALIFORNIA.

BRAMBLEBERRY INSECTS

RASPBERRY CROWN BORER (Bembecia marginata) emergence occurred in MICHIGAN research plots in Berrien County on August 23. Egg laying began the following day. This aegeriid continues as a serious pest of raspberries in Michigan. Damage by this pest was extensive in OREGON in untreated blackberries in Marion County. Larvae of ORANGE TORTRIX (Argyrotaenia citrana) were actively feeding and webbing tips of new growth of cane berries in the Willamette Valley of OREGON about 2 weeks earlier than normal.

STRAWBERRY WEEVIL (Anthonomus signatus) adults damaged blackberries in Narragansett, RHODE ISLAND, in early June and adults of a JAPANESE WEEVIL (Calomycterus setarius) were common on raspberries in East Greenwich at the same time. A WEEVIL (Sciopithes obscurus) emerged in late June in OREGON; it was more numerous than usual on cane berry fields of Linn, Marion, Yamhill and Clackamas Counties.

Adults of EASTERN RASPBERRY FRUITWORM (Byturus rubi) were common on raspberries in early May in RHODE ISLAND and RED-NECKED CANE BORER (Agrilus ruficollis) infested raspberries in Narragansett in late April in that State. Blackberries were heavily damaged in Harris County, TEXAS, by A. ruficollis. ROSE CHAFER (Macrodactylus subspinosus) was abundant in raspberries in Lawrence County, PENNSYLVANIA.

MINT INSECTS

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) and BLACK VINE WEEVIL (B. sulcatus) populations became heavy in mint fields of Linn County, OREGON, in April but they were effectively controlled with fumigation. A MINT FLEA BEETLE (Longitarsus waterhousei) caused some damage to peppermint fields of Umatilla County and in the Willamette Valley but damage was less than in 1964. ALFALFA LOOPER (Autographa californica) was unusually abundant and damaging to peppermint and other crops in many parts of WASHINGTON; VARIEGATED CUTWORM (Peridroma saucia) damaged mint throughout much of the State. CUTWORMS damaged mint in several counties of MICHIGAN. TWO-SPOTTED SPIDER MITE (Tetranychus urticae) severely damaged peppermint and other crops in western WASHINGTON.

ARTICHOKE, CHICORY, ENDIVE AND LETTUCE INSECTS

ARTICHOKE PLUME MOTH (Platyptilia carduidactyla) continued as a severe problem in artichoke plantings in Santa Cruz, Santa Barbara and San Mateo Counties, CALIFORNIA. CELERY LEAF TIER (Udea rubigalis) infested lettuce in San Joaquin County, California.

CABBAGE LOOPER (Trichoplusia ni) was light to medium on lettuce and other crops in ARIZONA during the spring; lighter than normal infestations of BEET ARMYWORM (Spodoptera exigua) occurred on spring and fall lettuce crops in that State and only scattered infestations were economic. Heavy populations and a large flight of adults of cabbage looper required continual treatments on lettuce fields in Dona Ana and Sierra Counties of NEW MEXICO. T. ni. was also a problem in Valencia and Bernalillo Counties and failure to control this noctuid caused some losses. VARIEGATED CUTWORM (Peridroma saucia) was widespread in the Willamette Valley of OREGON and it severely damaged new plantings of lettuce and other crops. Cabbage looper and ALFALFA LOOPER (Autographa californica) were present in COLORADO and tended to persist throughout the growing season on lettuce. TOMATO FRUITWORM (Heliothis zea) destroyed considerable acreage of fall lettuce in southern counties of NEW JERSEY. Moderate numbers of cabbage looper larvae caused moderate damage to lettuce at Cape Elizabeth, MAINE, in late June.

GREEN PEACH APHID (Myzus persicae) incidence was abnormally high in NEW JERSEY; lettuce and other crops were severely damaged. Lettuce mosaic destroyed up to 90 percent of many fall plantings of endive and chicory.

DARKLING BEETLES (Blapstinus sp. and Metoponium sp.) damaged lettuce and other crops in several CALIFORNIA locations.

SUMMARY OF INSECT CONDITIONS IN ALASKA - 1965

Prepared by R. A. Washburn

Highlights

Although spring and early summer were the coldest and driest in recent years, with only 4 days in excess of 60° F. until July, there was little apparent effect on insect problems except a slight delay in appearance. Several new insect problems developed that had not been noted previously.

Cereal and Forage Insects

CUTWORMS were the most numerous in several years. They were noted crossing highways in the Palmer area. Main destructive species were RED-BACKED CUTWORM (Euxoa ochrogaster) and BLACK ARMY CUTWORM (Actebia fennica). Large numbers of CUTWORM moths were taken in blacklight traps, but none of economic importance. The most numerous species continued to be Xylina thoracica. Most cutworm feeding occurred in newly emerging hay and grain fields; there was some injury to new shoots of brome. Usual numbers of grass inhabiting APHIDS and LEAFHOPPERS were found, but none in destructive numbers.

Fruit Insects

Insects on strawberries continued the most serious problem on fruits. A LEAF BEETLE (Galerucella sp.) appears to be widespread. In addition to the Sand Lake area near Anchorage, this beetle was found on strawberries at the Matanuska Experiment Station and on strawberries and cabbage at the College Experimental Farm in the Tanana Valley, as well as on willows several miles away. It was also present on strawberries near Willow. At Willow, two other beetles, a WEEVIL and a CLICK BEETLE, were present in almost every ripening fruit. A SPIDER MITE (Tetranychus sp.) continued a problem on some strawberries in the Sand Lake area as well as at the Matanuska Experiment Station, although generally no problem elsewhere. WESTERN RASPBERRY FRUITWORM (Byturus bakeri) were present in widely scattered localities. BLACK ARMY CUTWORM (Actebia fennica) fed on apple buds and leaves in the Matanuska station orchard; this is one of few insects attacking Malus in Alaska. MEADOW SPITTLEBUG (Philaenus spumarius) and GARDEN SLUGS continued troublesome to bush and cane fruits in some southeastern coastal areas.

Truck Crop Insects

BLACK ARMY CUTWORM (Actebia fennica) and RED-BACKED CUTWORM (Euxoa ochrogaster) heavily damaged commercial plantings of vegetables in the Matanuska Valley as well as many home gardens. This was heaviest damage to truck crops in a number of years. PSYLLIDS occurred in large numbers on turnip greens in the Sutton area. This is the first time psyllids have been found on an economically important crop. TURNIP MAGGOT (Hylemya floralis) continued as the most consistently serious insect problem. Where crucifers were heavily treated with chlorinated hydrocarbons, lesser control than in previous years was reported. Resistance has not been confirmed by laboratory tests.

Forest, Ornamental and Shade Tree Insects

A STINK BUG (Elasmostethus interstinctus) was heavy on poplar and birch in Fairbanks. APHIDS were heavy on caragana hedge in Fairbanks. A SPEAR-MARKED BLACK MOTH (Eulype hastata) rolled leaves on birch and poplar in Matanuska Valley and adults were common in moist sites. BIRCH LEAF MINER (Fenusa pusilla) infested numerous weeping cutleaf birches. A BIRCH APHID, probably Calaphis betulaecolens, continued troublesome to homeowners as much as any other single insect problem as most birches utilized as ornamentals were heavily infested and covered with large quantities of honeydew. An APHID (*Rhopalosiphum padi*) occurred on most *Prunus padus*, although degree of infestation varied considerably from plant to plant. EASTERN SPRUCE GALL APHID (*Chermes abietis*) produced distorted terminals on many spruce used as ornamentals. MITES were not quite as common on spruce as in previous years. IMPORTED WILLOW LEAF BEETLE (*Plagiodera versicolora*) heavily infested willows in Haines area. A GALL MIDGE (*Rhabdophaga strobiloides*) was also common on willows in many areas of the State. MOSSY-ROSE-GALL WASP (*Diplolepis rosae*) and an unspecified APHID were common on native rose (*Rosa acicularis*) but rare on cultivated varieties and species. RED-BACKED CUTWORM (*Euxoa ochrogaster*) continued destructive to many flower gardens as well as bedding plants in greenhouses.

Insects Affecting Man and Animals

BITING FLIES, especially BLACK FLIES and MOSQUITOES, were extremely annoying in interior and tundra areas and not so serious in more heavily settled areas as in 1964. Several problems of special interest were noted for the first time this year. A REINDEER WARBLE (*Hypoderma tarandi**) was as serious as usual in reindeer and caribou herds throughout the mainland of Alaska as well as in several of the reindeer herds on the islands. A WARBLE infestation in musk ox in the college herd appeared to be *H. tarandi*. They appeared somewhat abnormal as though not too well adapted to the host. BROWN DOG TICK (*Rhipicephalus sanguineus*) and an unspecified FLEA appear established in some family quarters on a military base near Anchorage.

Household and Structural Insects

GERMAN COCKROACH (*Blattella germanica*) and BROWN-BANDED COCKROACH (*Supella supellectilium*) continued troublesome in south central Alaska. EUROPEAN EARWIG (*Forficula auricularia*), after several introductions, appears to be surviving the winter on a military base near Anchorage. A CARPENTER ANT (*Camponotus* sp.) continued troublesome in many buildings using rough lumber in construction. A HORNTAIL (*Urocerus flavicornis*) emerged occasionally from green lumber used in houses.

Stored-Product Insects

Stored-product insects troublesome in the State continued to be the types found in home storage; most grain and feed normally infested in other States is stored in unheated buildings at temperatures to low for these insects to be active. However, infestations in homes were very widespread throughout the State, undoubtedly introduced from infested bagged and packaged products. Among the most consistent problems this year were RED FLOUR BEETLE (*Tribolium castaneum*), CONFUSED FLOUR BEETLE (*T. confusum*), SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) and YELLOW MEALWORM (*Tenebrio molitor*). MEDITERRANEAN FLOUR MOTH (*Anagasta kuehniella*) was occasionally troublesome.

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*Chillcott, J. G. 1965. Family Oestridae. *In* Stone, A. et al. Catalog of the Diptera of America North of Mexico, U. S. Dept. Agr. Handbk. No. 276:1112.

A Note on the Names Adelges and Adelginae

(Homoptera : Aphidoidea)

The International Commission on Zoological Nomenclature has approved the generic name Adelges Vallot, 1836, and suppressed the generic name Chermes Linnaeus, 1758. Both generic names have been applied to insects of the Aphidoidea that have been known commonly as aphids, adelgids, and chermids. The Commission also approved the subfamily name Adelginae Annand, 1928, and rejected the family-group name Chermides Fallen, 1814. These actions are recorded in Opinion 731, Bull. Zool. Nomen., vol. 22, pt. 2, pp. 86-87, 18 May 1965. In accordance with the Commission rulings, I will use Adelges in place of Chermes and Adelginae in place of Cherminae.

The family to which the Adelginae belongs was not considered by the Commission. It is relevant, however, because the subfamily was placed in the Phylloxeridae by Annand, an assignment followed by some later workers, while it is treated as a separate family, the Adelgidae, by many present day Europeans. There are ample reasons for recognizing two groups, but the adelgids and phylloxerans are believed to be much more closely related to each other than to other groups of aphids. Because of the similarities of their morphology and development, their closeness to each other and remoteness from other aphids, I believe their placement in subfamilies indicates their relationships more accurately than does their recognition as families. I shall therefore use Phylloxeridae, an older family name than the Adelgidae, for subfamilies Adelginae and Phylloxerinae.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MARCH 1966

The Weather Bureau's 30-day outlook for March calls for temperatures to average below seasonal normals west of the Mississippi River except for near normal in northern border States. East of the Mississippi, above normal temperatures are anticipated in South and Middle Atlantic Coast States while near normal averages are in prospect elsewhere. Precipitation is expected to exceed normal over most of the eastern half of the Nation except for near normal totals in the upper Mississippi Valley and the upper Great Lakes as well as in Florida. Elsewhere, near normal precipitation is in prospect except for above normal over the southern Rockies and subnormal amounts in northern border States.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D. C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING MARCH 7

HIGHLIGHTS: (1) Blizzard northern Great Plains. (2) Severe tornadoes Mississippi-Alabama. (3) Heavy rains continue Southeast.

One of the worst blizzards of the century began as a Low over the northern Rockies on Tuesday. Rain and snow covered a widespread area from the Pacific through eastern Montana and Wyoming; Eugene, Oregon, recorded an unusual snowfall of two inches. The deepening storm became a blizzard on Wednesday as it traveled slowly eastward across the northern Plains accompanied by heavy snowfalls, winds over 70 m.p.h., blowing and drifting snow, and low visibilities. The blizzard continued to rage until Saturday. Bismarck, North Dakota, reported record snowfalls for a 24-hour period. Up to 3 feet of snow fell throughout the northern Plains, while hurricane-force winds piled drifts as high as 20 feet. Most towns were isolated by the choking, blinding, blowing snow. Powerlines were down from Montana through Wisconsin. Many homes were without heat, and several towns were without communications. Transportation and commerce came to a standstill; livestock losses were heavy. At least 15 deaths were attributed to the blizzard.

Cold Arctic air borne on strong northwesterly winds came barrelling in behind and through the blizzard area. Temperatures plummeted adding to the paralysis and hampering the "digging out." Record March lows were reported in Arizona and Utah, and duststorms caused by the high winds damaged wheat fields in the southern Plains. By Saturday the blizzard conditions ended, but high winds, rain, and snow continued into the Northeast as the weakening storm moved towards the Canadian Maritime Provinces. Skies gradually cleared by Sunday as the cold air following the system spread through the Midwest and the East Coast States from the Canadian border through Florida. In contrast to the blizzard, warm, moist air flowing northward from the gulf ahead of the storm brought mild temperatures to the East. Weekly averages were much above normal from the Great Lakes to the Atlantic and the week was the warmest since November in the Middle Atlantic States. A rising trend was also noted in the Southeast where temperatures at this time of the year are critical to agricultural interests. The gulf air also brought heavy precipitation. On Monday, 2 storm centers, one over the Ohio Valley and one over the Carolina coast, spread heavy showers and thundershowers from the Mississippi River to the Atlantic and caused local flooding while only minor damage resulted from 3 tornadoes in northern Florida and southern Georgia. The rain gradually abated by Tuesday. On Thursday and Friday rain drenched the Southeast, resulting in the fourth straight week of above normal precipitation. (By way of contrast Texas experienced the driest weather in 14 weeks.) The heaviest precipitation was centered over western Georgia, where flash flooding required the evacuation of scores of families. A series of tornadoes racked Mississippi and Alabama on Thursday. The worst twisters reported in Mississippi since 1936 smashed suburban Jackson leveling a shopping center and knocking out communications and electric power. Overall, these tornadoes killed more than 60 persons, injured at least 500 others, and caused $12 million worth of property damage. (Summary supplied by U. S. Weather Bureau).

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